DevOps Fundamentals

Course Overview
Organizations today are seeking ways to improve the efficiency of both their software development efforts and operations while still meeting quality objectives. Competitive pressures and customer demands continue to reduce software product release schedules, driving the pursuit of faster software releases, which in turn requires even more efficient testing capabilities. Agile development adoption is driving the need for increased value delivery efficiency. In this performance driven environment, software development, testing, and operations must evolve to meet iteration and release delivery goals while continuing to meet organizational quality objectives.

DevOps is the combination of development, testing, and operations and includes continuous integration, automated testing, continuous delivery, and rapid deployment practices. Because DevOps practices require confidence that changes made to the code base will function as expected, automated testing is an essential ingredient that is integrated in the process in every step and relied upon for enforcement of quality gates and to ensure overall delivery quality. This course will teach you how to avoid the common mistakes of DevOps implementations and to leverage DevOps best practices including:

- Test automation
- automate everything
- incremental build and delivery
- continuous improvement
- frequent code commits
- infrastructure as code
- fix the build(!) prioritization
- repeatable, reliable processes
- collaboration and communication
- operations in DevOps

Upon completion of the course, students will be able to recognize positive and negative patterns of software build, test, and deployment in their organization that relate to DevOps. Key concepts that will be introduced and discussed include:

- test strategy and implementation within a CI/CD context
- automated quality gates
- managing configuration
- continuous integration and delivery
- automated deployments
- operations management of infrastructure and data
- organizational impacts of DevOps implementation
- Bring your specific issues and problems to the training course for discussion as well.

Who Should Attend
This course is appropriate for experienced software test professionals, operations engineers, software developers, project managers, and business owners.
No specific prerequisites are assumed; however, attendees are expected to have some experience with software builds, deployments, and automated testing.

Course Structure
DevOps Fundamentals is a 2-day course consisting of lecture and in-class participatory exercises and quizzes

2-Day DevOps Course Outline
1. Introduction to DevOps
   - What is DevOps?
   - Business value and benefits of DevOps
   - DevOps vs traditional approaches
   - DevOps principles

2. Configuration Management
   - Source code control
   - Version management
   - Managing infrastructure and configuration
   - Managing data

3. Continuous Integration
   - CI culture
   - CI principles
   - CI best practices
   - Build automation
   - Build quality

4. Test Strategy, Integration, and Automation
   - Testing types
   - Testing integration
   - Automated testing

5. Continuous Delivery
   - CD introduction and definition
   - CD principles
   - CD best practices
   - Deployment pipelines
   - Deployment automation frameworks

6. Operations
   - Continuous monitoring
   - Managing infrastructure
   - Managing databases

7. Organizational DevOps
   - DevOps within an agile context
   - Cultural challenges
   - Addressing governance and policy requirements

Class Daily Schedule
Sign-In/Registration 7:30-8:30 a.m.
Morning Session 8:30 a.m.-12:00 p.m.
Lunch 12:00-1:00 p.m.
Afternoon Session 1:00-5:00 p.m.
Times represent the typical daily schedule and do not include morning and afternoon breaks typically included. Please confirm your schedule at registration.

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